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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Patrick Denis Lincoln

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EXAMINER

NGO, NGUYEN HOANG

ART UNIT

PAPER NUMBER

2416

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/800,890	Applicant(s) LINCOLN ET AL.	
	Examiner NGUYEN NGO	Art Unit 2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/10/2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-64 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-64 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

This communication is in response to the RCE of 12/10/2008. Accordingly, Claims 1-64 are currently pending in the application.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agarwal et al. (US 2004/0179486), in view of Banerjee (US 20020147722), hereinafter referred to as Agarwal and Banerjee.

Regarding claim 1, 26, 51, Agarwal discloses a method for detecting a substring of interest (packet) from a plurality of substrings (packets) that arrives out-of-order

(method for segmentation, reassembly and inverse multiplexing of packets, abstract),
comprising:

receiving a substring with an index (receive a segment with SARId equal to 1 and also having F and L bits set, page 8 [0100]-[0101] and figure 12c);

determining whether a preceding span exists in a span set (if the F bit is set, as determined in step 12c-3, a new reassembly buffer is created, page 8[0101]). Examiner correlates preceding span to mean any previously received segments;

determining whether a succeeding span exists in said span set (if the L bit is not set, in step 12c-8, a search is made for the reassembly buffer and if no reassembly buffer is found, the segment is discarded. If the reassembly buffer is found, the segment data is appended to the buffer, page 8 [0101]); and

Agarwal however fails to specifically disclose having a datagram comprise a body substring and a header and applying an automation having a list of substrings of interest to the body substring of said datagram to determine whether contents of said body substring match one of said substring of interest. Agarwal however discloses of segmenting and reassembling segmented packets with the use of reassembly buffers (page 8 [0101]-[0102] and figure 12C). In a very similar endeavor, Banerjee discloses a method, system, and program product for reassembling fragmented datagram (abstract) and further discloses that the datagram comprises a header with an index (page 2 [0023]) and a body substring (fragmented data, page 2 [0023]) and further discloses comparing the ip_id of the datagram fragment with the ip_id's of other fragments already

stored in the selected reassembly queue and if there is no matches found in the selected reassembly queue, allocate the datagram to the queue (applying an automation (automation of determining a match) having a list of substrings of interest (list of fragments already stored) to the body substring of said datagram (ip_id representing body substring of datagram (datagram fragment)) to determine whether contents of said substring match one of said substring of interest, page 2 [0024]). It would have thus been obvious to incorporate the well known concept of determining if a received fragmented datagram matches another fragmented datagram stored in a reassembly queue as disclosed by Banerjee into the method and apparatus for segmentation and reassembly of packets as disclosed by Agarwal in order to efficiently and correctly reassemble fragmented data.

In essence, Banerjee discloses the use of ip_id of the received datagram and the use of ip_id of already stored datagrams to compare the two to see if there is a match (automation). Examiner interprets the ip_id to represent a datagram and its contents, in which each datagram has it's own ip_id, thus comparing the ip_id of datagrams can correlate to applying an automation (which is a broad term) having a list of substrings of interests (already received datagrams and their corresponding contents/body substring which are represented by an ip_id) to the body substring of said received datagram (received datagram and it's corresponding contents/body substring which is represented by an ip_id) to determine whether contents of said body substring match one of said substring of interest. Thus if there is a match in ip_id, there is a match in the body substring of the datagrams.

Regarding claim 2, 27, 52, Agarwal discloses the method of claim 1, wherein if said preceding span and said succeeding span do not exist, then said substring is inserted into said span set (create new reassembly buffer, 12c-4 of figure 12c).

Regarding claim 3, 28, 53, Agarwal discloses the method of claim 1, wherein if said succeeding span does exist, then said substring is joined with said succeeding span to produce a join span (12c-8 of figure 12c).

Regarding claim 4, 29, 54, Agarwal discloses the method of claim 3, wherein said succeeding span is replaced by said join span (segment data is appended to the buffer, page 8 [0101]).

Regarding claim 5, 30, 55 Agarwal discloses the method of claim 1, wherein if said proceeding span does exist, then said preceding span is joined with said substring to produce a join span (12c-8 or 12c-7 of figure 12c).

Regarding claim 6, 31, 56, Agarwal discloses the method of claim 5, wherein said preceding span is replaced by said join span (segment data is appended to the buffer, page 8 [0101]).

Regarding claim 7, 32, 57, Agarwal discloses the method of claim 1, wherein if said preceding span and said succeeding span do exist, then said preceding span is joined with said substring to produce a join span (12c-8 of figure 12c).

Regarding claim 8, 9, 33, 34, 58, 59, Agarwal discloses the method of claim 7, wherein said join span is joined with said succeeding span to produce a second join span (12c-8 of figure 12c).

Regarding claim 10, 35, 60, Agarwal discloses the method of claim 1, wherein said substring is forwarded, while parameters of said substring are stored (page 11 [0147]).

Regarding claim 11, 36, 61, Agarwal discloses the method of claim 10, wherein said parameters comprise at least one of a state of said automaton (F and L bit of figure 12c), said index (sequence number of figure 13b and 7b), a length of the substring (length of packet is defined and prepended to the packet, page 6 [0078]) and a prefix (headers, page 6 [0078]).

Regarding claim 23, 48, 62, Agarwal discloses the method of claim 10, further comprising:

determining whether said forwarded substring is subsequently dropped by a target machine (page 11 [0143]). Examiner correlates thus to determining if a frame/packet has been reassembled properly.

Regarding claim 24, 49, 63, Agarwal discloses wherein if said forwarded substring is subsequently dropped (corrupted packet), then a connection for passing said forwarded substring is reset (page 9 [0121]).

Regarding claim 25, 50, 64, Agarwal discloses wherein said connection is a TCP connection (page 2 [0019]).

Regarding claims 12-22, 37-47 Agarwal and Banerjee fails to specifically disclose that the method of detecting a substring of interest is performed as a network monitoring function as well as other specified function in claims 13-22. Agarwal however discloses of the need for users to expect packet delivery to be transmitted and received in the order in which they were sent (page 2 [0020]) and further discloses of bit error rates (page 2 [0016]). It would have thus been obvious to a person skilled in the art at the time the invention was made to have the method of segmentation, reassembly, and inverse multiplexing of packets, more specifically detecting a substring (segmented packet) of interest and what to do with detected segment, as disclosed by Agarwal be performed as a network monitoring function in order to ensure the proper delivery of

packets from source to destination with little or no error. It should further be noted that claims 13-22 simply refer to different functions that the method may be performed by.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NGUYEN NGO whose telephone number is (571)272-8398. The examiner can normally be reached on Monday-Friday 7am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Yao can be reached on (571)272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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